

Amendment to the Claims

The current listing of the claims replaces all previous amendments and listings of the claims.

1. (Currently Amended) An apparatus for forming a coating film, comprising:
holding means for holding a substrate horizontally;
a rotation mechanism configured to rotate said holding means such that the substrate held by said holding means is allowed to rotate in a horizontal plane;
a nozzle configured to drop a coating liquid on a surface of the substrate; and
gyrating force generation means for giving a gyrating force to the coating liquid such that the coating liquid continues to gyrate after being dropped from said nozzle, the gyrating force generating means extending to a position adjacent an exit of the nozzle

~~wherein the nozzle is configured to drop the coating liquid in a rod-like state with a gyration given by the gyrating force generating means.~~

2. (Currently Amended) An apparatus for forming a coating film, comprising:
holding means for holding a substrate horizontally;
a rotation mechanism configured to rotate said holding means such that the substrate held by said holding means is allowed to rotate in a horizontal plane; and
a nozzle configured to drop a coating liquid through a hole on a surface of the substrate, and

a spiral groove formed on an inner wall of the hole of said nozzle, the spiral groove extending to a position adjacent an exit of the nozzle and configured to gyrate the coating liquid such that the coating liquid continues to gyrate after being dropped from the nozzle

~~wherein the nozzle is configured to drop the coating liquid in a rod-like state with a gyration in accordance with the spiral groove.~~

3. (Currently Amended) The An apparatus according to ~~claim 2~~ for forming a coating film, further comprising:

holding means for holding a substrate horizontally;

a rotation mechanism configured to rotate the holding means such that the substrate held by the holding means is allowed to rotate in a horizontal plane; and

a nozzle configured to drop a coating liquid through a hole on a surface of the substrate,

a spiral groove formed on an inner wall of the hole of the nozzle, and

a center rod provided at a center of the hole and configured to flow the coating liquid along the inner wall of the hole,

wherein the nozzle is configured to drop the coating liquid with a gyration in accordance with the spiral groove.

4. (Currently Amended) The apparatus according to claim 2, wherein the spiral groove is configured such that the coating liquid and a dilution liquid configured to dilute the coating liquid are supplied separately[[,]] are mixed during passing said spiral groove, and the mixed liquid is given a gyrating force and is dropped from said nozzle.

5. (Original) The apparatus according to claim 2, wherein the hole is tapered toward an exit from which the coating liquid is dropped.

6. (Currently Amended) An apparatus for forming a coating film on a substrate by applying a coating liquid to the substrate, comprising:

holding means for holding the substrate horizontally;

a rotation mechanism for rotating said holding means such that the substrate held by said holding means is allowed to rotate in a horizontal plane;

a nozzle configured to drop the coating liquid through a hole on a surface of the substrate on said holding means;

a center rod provided at a center of the hole such that the coating liquid flows along an inner wall of the hole, the center rod extending to a position adjacent an exit of the nozzle;
and

a plurality of fins disposed on the center rod and configured to flow the coating liquid in a spiral manner, the plurality of fins extending to a position adjacent the exit of the nozzle.

7. (Currently Amended) The apparatus according to claim 6, wherein the hole is configured such that the coating liquid and a dilution liquid configured to dilute the coating liquid ~~are~~ supplied separately~~[[,]]~~ are mixed during passing through the hole, and the mixed liquid is given a gyrating force by said fins and is dropped from said nozzle.

8. (Original) The apparatus according to claim 6, wherein the hole is tapered toward an exit from which the coating liquid is dropped.

9.-12. (Canceled)

13. (Currently Amended) An apparatus for forming a coating film on a substrate by applying a coating liquid to the substrate, comprising:

~~holding means for holding~~ a holder configured to hold the substrate horizontally;
a rotation mechanism configured to rotate the ~~holding means~~ holder such that the substrate held by the ~~holding means~~ holder is allowed to rotate in a horizontal plane;
a nozzle configured to drop the coating liquid on a surface of the substrate;
a gyrating force generation means for giving generator configured to give a gyrating force to the coating liquid such that the coating liquid continues to gyrate after being dropped from the nozzle, the gyrating force generator extending to a position adjacent an exit of the nozzle; and

a center rod provided at a center of the hole of the nozzle and configured to flow the coating liquid along an inner wall of the nozzle.

14. (Currently Amended) An apparatus for forming a coating film on a substrate by applying a coating liquid to the substrate, comprising:

~~holding means for holding~~ a holder configured to hold the substrate horizontally;
a rotation mechanism configured to rotate the ~~holding means~~ holder such that the substrate held by the ~~holding means~~ holder is allowed to rotate in a horizontal plane; and
a nozzle configured to drop the coating liquid through a hole on a surface of the substrate,

wherein a spiral groove is formed on an inner wall of the hole of the nozzle, and
wherein a center rod is provided at a center of the hole such that the coating liquid flows easily along the inner wall of the hole.

15. (Currently Amended) An apparatus for forming a coating film on a substrate by applying a coating liquid to the substrate, comprising:

~~holding means for holding~~ a holder configured to hold the substrate horizontally;
a rotation mechanism configured to rotate the ~~holding means~~ holder such that the substrate held by the ~~holding means~~ holder is allowed to rotate in a horizontal plane; and
a nozzle configured to drop the coating liquid through a hole on a surface of the substrate,

wherein a spiral groove is formed on an inner wall of the hole of the nozzle, the spiral groove extending to a position adjacent an exit of the nozzle, and

wherein the coating liquid and a dilution liquid configured to dilute the coating liquid are supplied separately in the spiral groove, the coating and dilution liquid are mixed during passing the spiral groove, and the mixed liquid is given a gyrating force and is dropped from the nozzle.

16. (New) The apparatus according to claim 3, wherein the spiral groove is configured such that the coating liquid and a dilution liquid configured to dilute the coating

liquid supplied separately are mixed during passing said spiral groove, and the mixed liquid is given a gyrating force and is dropped from said nozzle.